

Appl. No.: 10/615,531

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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in this application.

1. (Original) A scanning electron microscope comprising:
 - an electron source to radiate an electron beam;
 - an objective lens system to focus the radiated electron beam on a sample;
 - a scanning system to scan said focused electron beam on said sample;
 - a secondary electron detection system to detect secondary electrons emitted from said sample; and
 - a secondary electron image displaying system to display a secondary electron image of said sample with a secondary electron detection signal from said secondary electron detection system; wherein
 - said objective lens system is composed of a first objective lens and a second objective lens;
 - said first objective lens is arranged on a side near to said electron source;
 - said second objective lens is disposed adjacent to said first objective lens and is arranged on a side near to said sample;
 - said scanning system is a scanning coil;
 - said secondary electron detection system is a secondary electron detector that is provided on the electron source side of said objective lens system; and
 - said first objective lens is mainly excited when a wide visual field mode is used and said second objective lens is mainly excited when a high resolution mode is used.

2. (Original) A scanning electron microscope comprising:
- a an electron source to radiate an electron beam;
 - a an objective lens system to focus the radiated electron beam on a sample;
 - a a scanning system to scan said focused electron beam on said sample;
 - a a secondary electron detection system to detect secondary electrons emitted from said sample; and
- a secondary electron image displaying system to display a secondary electron image of said sample with a secondary electron detection signal from said secondary electron detection system; wherein
- said objective lens system is composed of a first objective lens and a second objective lens;
 - said first objective lens is arranged on a side near to said electron source;
 - said second objective lens is disposed adjacent to said first objective lens and is arranged on a side near to said sample;
 - said scanning system is a scanning deflective electrode;
 - said secondary electron detection system is a secondary electron detector that is provided on the electron source side of said objective lens system; and
 - said first objective lens is mainly excited when a wide visual field mode is used and said second objective lens is mainly excited when a high resolution mode is used.
3. (Original) A scanning electron microscope according to claim 1, wherein when a wide visual field mode is used, said first objective lens is mainly excited, and said second objective lens is dependently excited in a direction opposite to an excitation direction of said first objective lens to cancel off-axis chromatic aberration.

4. (Original) A scanning electron microscope according to claim 2, wherein when a wide visual field mode is used, said first objective lens is mainly excited, and said second objective lens is dependently excited in a direction opposite to an excitation direction of said first objective lens to cancel off-axis chromatic aberration.

5. (Original) A scanning electron microscope according to claim 1, wherein at least one of said first objective lens and said second objective lens is formed of a plurality of exciting coils.

6. (Original) A scanning electron microscope according to claim 2, wherein at least one of said first objective lens and said second objective lens is formed of a plurality of exciting coils.

7. (Original) A scanning electron microscope according to claim 5, wherein a plurality of exciting coils, which are not mainly excited, are excited in a direction opposite to each other;

synthesized magnet-motive force is composed to become substantially zero; and thermal change is hard to generate even though the mode is changed.

8. (Original) A scanning electron microscope according to claim 6, wherein a plurality of exciting coils, which are not mainly excited, are excited in a direction opposite to each other;

synthesized magnet-motive force is composed to become substantially zero; and thermal change is hard to generate even though the mode is changed.

9. (Original) A scanning electron microscope according to claim 1, wherein said first objective lens is provided with two pairs of separated coils in which a first pair of separated coils is composed of two separated coils spaced in a main axis direction of said objective lens system;

a yoke is disposed between said first pair of separated coils and a second pair of separated coils;

when the wide visual field mode is used, magnet-motive forces in a same direction are generated in each separated coil of the first pair of separated coils, and magnet-motive forces in a same direction are generated in each separated coil of the second pair of separated coils, but opposite magnet-motive force is generated from the generated magnet-motive force in the first pair of separated coils; and

when the high resolution mode is used, said magnet-motive forces of the first objective lens are canceled by generating magnet-motive forces in a direction opposite to each other in each separated coil which is composed as one pair.

10. (Original) A scanning electron microscope according to claim 2, wherein said first objective lens is provided with two pairs of separated coils in which a first pair of separated coils is composed of two separated coils spaced in a main axis direction of said objective lens system;

a yoke is disposed between said first pair of separated coils and a second pair of separated coils;

when the wide visual field mode is used, magnet-motive forces in a same direction are generated in each separated coil of the first pair of separated coils, and magnet-motive forces in a same direction are generated in each separated coil of the second pair of separated coils, but opposite magnet-motive force is generated from the generated magnet-motive force in the first pair of separated coils; and

when the high resolution mode is used, said magnet-motive forces of the first objective lens are canceled by generating magnet-motive forces in a direction opposite to each other in each separated coil which is composed as one pair.

11. (Original) A scanning electron microscope according to claim 1, wherein said first objective lens and said second objective lens comprise an exciting coil and a yoke respectively; and

one part of the yoke constituting said first objective lens and one part of the yoke constituting said second objective lens are shared.

12. (Original) A scanning electron microscope according to claim 2, wherein said first objective lens and said second objective lens comprise an exciting coil and a yoke respectively; and

one part of the yoke constituting said first objective lens and one part of the yoke constituting said second objective lens are shared.

13. (Original) A scanning electron microscope according to claim 1, wherein said first objective lens system and said second objective lens system are disposed concentrically; and said first objective lens system is disposed inside said second objective lens system. 13.

14. (Original) A scanning electron microscope according to claim 2, wherein said first objective lens system and said second objective lens system are disposed concentrically; and said first objective lens system is disposed inside said second objective lens system.

15. (New) A scanning electron microscope comprising:
an electron source to radiate an electron beam;

an objective lens system to focus the radiated electron beam on a sample;
a scanning system to scan said focused electron beam on said sample;
a secondary electron detection system to detect secondary electrons emitted from said sample; and

a secondary electron image displaying system to display a secondary electron image of said sample with a secondary electron detection signal from said secondary electron detection system; wherein

said objective lens system is composed of a first objective lens and a second objective lens;

said first objective lens and said second objective lens are arranged concentrically;

said first objective lens system is disposed inside said second objective lens system;

said scanning system is at least one of a scanning coil and a scanning deflective electrode;

said secondary electron detection system is a secondary electron detector that is provided on the electron source side of said objective lens system; and

said first objective lens is mainly excited when a wide visual field mode is used and said second objective lens is mainly excited when a high resolution mode is used.

16. (New) A scanning electron microscope according to claim 15, wherein said first objective lens is arranged on a side near to said electron source; and

said second objective lens is disposed adjacent to said first objective lens and is arranged on a side near to said sample.

17. (New) A scanning electron microscope according to claim 15, wherein when a wide visual field mode is used, said first objective lens is mainly excited, and said second

objective lens is dependently excited in a direction opposite to an excitation direction of said first objective lens to cancel off-axis chromatic aberration.